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ABSTRACT

The University of Massachusetts model is an attempt to institutionalize change by way of a thorough analysis of educational roles, tasks, structure, and objectives. Among the essential characteristics of the model are: its provision for a wide variety of possible overall teacher-training strategies, and its provision for continuous diagnosis of the needs of each trainee and for constant evaluation of the program components designed to meet these needs. (Cronbach's concept of aptitude-treatment interaction is an important research component of the program.) Trainee requirements are stated in terms of performance criteria in three major areas: human relations, behavioral skills, and subject matter knowledge. In addition, for every criterion at least two instructional alternatives are provided for learning how to meet the criterion. When the trainee meets the specified criteria requirements, he will have completed the program, regardless of the length of time enrolled. Among other major concepts incorporated in the model (organized, managed, and designed according to systems analysis) are: differentiated staffing, variable entry and exit points, and university commitment to its graduates beyond graduation. (See ED 034 076 for a readers' guide to the nine funded models.) (Author/ES)

Brief Title:

Guide to
University of Massachusetts
Teacher Education Model

Cooper

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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A GUIDE TO
MODEL ELEMENTARY TEACHER EDUCATION PROGRAM

James M. Cooper

Published by
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The following Guide is one of the nine which appears in the publication A Reader's Guide to the Nine Models for Preparing Elementary Teachers. The Guide is available free in limited quantity from the ERIC Clearinghouse on Teacher Education; for $4.00 from American Association of Colleges for Teacher Education, One Dupont Circle, Washington, D.C. 20036; and for $1.25 in microfiche and $15.90 in hard copy from the ERIC Document Reproduction Service (EDRS), 4936 Fairmont Ave., Bethesda, Md. 20014. The order number at EDRS is ED 034 076.

The Clearinghouse is publishing each of the nine guides separately as well as collectively for the convenience of those readers interested in a specific elementary teacher education model. The above individual Guide also is available free in limited quantity from the Clearinghouse and for $0.25 in microfiche and $1.40 in hard copy from EDRS. An abstract of the above Massachusetts model will appear in the May 1970 Research in Education.

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Introduction

On October 16, 1967, the U.S. Office of Education issued a request for the development of proposals on educational specifications for comprehensive undergraduate and inservice teacher education programs for elementary teachers. (The term elementary teacher included preschool teachers and teachers through grade 8.)

These proposals were for the design phase (phase I) of an intended three-phase project. By January 1, 1968, 80 proposals had been received. On March 1, 1968, the Bureau of Research awarded nine contracts to design conceptual models for programs for the training of prekindergarten and elementary school teachers, for the preservice as well as inservice components. These models were completed October 31, 1968.

Reports on phase I have been made under the following titles: A Model for the Preparation of Elementary School Teachers (Florida State University), G. Wesley Sowards, project manager; Behavioral Science Elementary Teacher Education Program (Michigan State University), W. Robert Houston, project director; A Competency-Based, Field-Centered Systems Approach to Elementary Education (Northwest Regional Educational Laboratory), H. Del Schalock and James R. Hale, editors; Specifications for a Comprehensive Undergraduate and Inservice Teacher Education Program for Elementary Teachers (Syracuse University), William Benjamin and others, authors; The Teacher-Innovator: A Program To Prepare Teachers (Teachers College, Columbia University), Bruce R. Joyce, principal author.

Also, Georgia Educational Model Specifications for the Preparation of Elementary Teachers (The University of Georgia), Charles E. Johnson, Gilbert F. Shearron, and A. John Stauffer, directors; Educational Specifications for a Comprehensive Elementary Teacher Education Program (The University of Toledo), George E. Dickson, director; A Model of Teacher Training for the Individualization of Instruction (University of Pittsburgh), Horton C. Southworth, director; and Model Elementary Teacher Education Program (University of Massachusetts), Dwight Allen, principal investigator, and James M. Cooper, project director.

In phase II, several institutions are studying the feasibility of developing, implementing, and operating a model program based upon specifications in phase I. In the third phase, the U.S. Office of Education hopes to be able to support implementation of some of the model proposals for restructuring teacher education.

Since the models cover almost 6,000 pages devoted to detailed specifications of behavioral objectives, materials, treatments, evaluation of specific elements of the programs, and the like, the ERIC Clearinghouse on Teacher Education, on April 15-16, 1969, sponsored in collaboration with the American Association of Colleges for Teacher Education (AACTE) which acts as its fiscal agent, a writers' conference in which key personnel involved in developing the models wrote guides to their specific programs.

A second-day of verbal interaction followed, at which time the writers discussed their personal reactions to all of the models and past, present, and future implications for teacher education. The panelists wanted to make it clear that in their discussion the models were being described at but one point on a continuum. They called the models catalytic agents which have generated a great deal of discussion, interaction, and continuing change. At this conference they said it was important for them to explore the range of alternative interpretations of issues such as, "What are behavioral objectives? What is a model? What does it mean to personalize? To individualize?" They said that some kind of projection needed to be made about what remains to be done--either by resolving issues, or if they are resolved, to act upon them. This whole exercise [the writers' conference] will have made a major contribution to teacher education if it focuses on the issues at the center of this whole models effort and helps to extend the models, they said.

This guide to the models should assist those who are interested in learning about or implementing them. The entire collection of models is available from the ERIC system in either hard copy or microfiche and from the Government Printing Office (GPO) in a honeycomb binding. The ERIC ordering address is: EDRS, The National Cash Register Co., 4936 Fairmont Avenue, Bethesda, Md. 20014. The GPO address is: The Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

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Also available (or to be available soon) are the following related reports: 1. Nine Proposals for Elementary Teacher Education, A Description of Plans To Design Exemplary Training Programs by Nicholas A. Fattu of Indiana University. This document is a summary of the nine originally proposed programs which were funded in phase I of the project for preparing elementary teachers. Available through ERIC: ED 018 677, Price: $6.55 for hard copy; $0.75 for microfiche. 2. Analysis and Evaluation of Plans for Comprehensive Elementary Teacher Education Models by William E. Engbretson of Governors State University. This document is an analysis of the 71 proposed, but unfunded models of phase I. Available through ERIC: ED 027 268, Price: $12.60, hard copy; $1.00, microfiche.

3. A self-initiated critique of the Syracuse University model program, Specifications for a Comprehensive Undergraduate and Inservice Teacher Education Program for Elementary Teachers. ED 027 276, Price: $7.20 for hard copy; $0.75 for microfiche. 4. Some Comments on Nine Elementary Teacher Education Models by the System Development Corporation. This paper is adapted from remarks made at an American Educational Research Association conference in November 1968. Available through ERIC: ED 029 813, Price $0.75 for hard copy; $0.25 for microfiche. 5. Twenty-page summaries of the nine reports are available, free of charge, from: Elementary Teacher Education Project, Division of Elementary and Secondary Research, National Center for Educational Research and Development, U.S. Office of Education, 400 Maryland Avenue, S.W., Washington, D.C. 20202.

6. A Bibliography of References Used in the Preparation of Nine Model Teacher Education Programs by James F. Schaefer Jr. (Washington, D.C.: ERIC Clearinghouse on Teacher Education and the Bureau of

Research, U.S. Office of Education, 1969). ED 031 460, Price: $4.95, hard copy; $0.50, microfiche. 7. Analytic Summaries of Specifications for Model Teacher Education Programs, 8. A Short Summary of 10 Model Teacher Education Programs, and 9. Techniques for Developing an Elementary Teacher Education Model are three publications which were issued by the System Development Corporation in July 1969.

It is appropriate to express appreciation to the Clearinghouse staff for its dedication and hard work in completing this manuscript: Dr. Joost Yff, assistant director, and Mrs. Dorothy Mueller, program associate, whose advice and guidance were invaluable; Mrs. Lorraine Poliakoff and Mrs. Suzanne Martin, information analysts, who provided the index to this volume; and to the clerical staff of the Clearinghouse, especially Mrs. Vera Juarez, whose steady assistance made this publication possible. Appreciation also should be expressed to AACTE for its role in the conference and in this Guide, and, of course, to the writers of the guides for their full cooperation both during and after the conference.

The Clearinghouse on Teacher Education is pleased to present this guide to the nine models in the hope that it will stimulate extensive study of ways to improve school personnel preparation and thereby the educational opportunities for America's children and youth.

Kaliopee Lanzillotti, Publications Coordinator

Joel Burdin, Director

February 1970

About ERIC

The Educational Resources Information Center (ERIC) forms a nationwide information system established by the U.S. Office of Education, designed to serve and advance American education. Its basic objective is to provide ideas and information on significant current documents (e.g., research reports, articles, theoretical papers, program descriptions, published or unpublished conference papers, newsletters, and curriculum guides or studies) and to publicize the availability of such documents. Central ERIC is the term given to the function of the U.S. Office of Education, which provides policy, coordination, training, funds, and general services to the 19 clearinghouses in the information system. Each clearinghouse focuses its activities on a separate subject-matter area; acquires, evaluates, abstracts, and indexes documents; processes many significant documents into the ERIC system; and publicizes available ideas and information to the education community through its own publications, those of Central ERIC, and other educational media.

Teacher Education and ERIC

The ERIC Clearinghouse on Teacher Education, established June 20, 1968, is sponsored by three professional groups--the American Association of Colleges for Teacher Education (fiscal agent); the National Commission on Teacher Education and Professional Standards of the National Education Association (NEA); and the Association for Student Teaching, a national affiliate of NEA. It is located at One Dupont Circle, Washington, D.C. 20036.

Scope of Clearinghouse Activities

Users of this guide are encouraged to send to the ERIC Clearinghouse on Teacher Education documents related to its scope, a statement of which follows:

> *The Clearinghouse is responsible for research reports, curriculum descriptions, theoretical papers, addresses, and other materials relative to the preparation of school personnel (nursery, elementary, secondary, and supporting school personnel); the preparation and development of teacher educators; and the profession of teaching. The scope includes recruitment, selection, lifelong personal and professional development, and teacher placement as well as the profession of teaching. While the major interest of the Clearinghouse is professional preparation and practice in America, it also is interested in international aspects of the field.*

The scope also guides the Clearinghouse's Advisory and Policy Council and staff in decisionmaking relative to the commissioning of monographs, bibliographies, and directories. The scope is a flexible guide in the idea and information needs of those concerned with the pre- and inservice preparation of school personnel and the profession of teaching.

How To Use This Guide

Each guide has this general outline: overview, program goals and rationale, selection procedures, professional preservice component, relationship of professional component to academic component, inservice component, faculty requirements and staff utilization, evaluation component, program management, and summary. The Teachers College guide, which was not written at the conference, is the only one with a different outline.

In the Government Printing Office (GPO) edition of the models, some of the pages were numbered differently from the original reports which were processed into the ERIC system. For the readers' convenience, the footnotes to the guides include the page references to both the GPO and ED (ERIC) editions. If the page references in the footnotes were the same for both editions, only one set of page numbers is given.

"ED" or order numbers for the models appear along with the prices and other information in the introduction. Ordering information about other references in the ERIC collection would appear in the bibliography to each guide.

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OVERVIEW

The University of Massachusetts Model Elementary Teacher Education Program (METEP) is an attempt to institutionalize change by way of a thorough analysis of educational roles, tasks, structure, and objectives. METEP uses the concept of performance criteria as a guideline for designing the program. Rather than stating trainee requirements in terms of courses, they are stated in terms of performance criteria in three major areas--human relations, behavioral skills, and subject matter knowledge. Statements of what the trainee is expected to do, under what conditions he will do it, and how he will be evaluated constitute a performance criterion. In addition, for every criterion at least two instructional alternatives are provided for learning how to meet the criterion. When the trainee meets the specified criteria requirements, he will have completed the program, regardless of the length of time enrolled.

Crucial to the implementation of a performance curriculum is an organization which gives coherence and structure to an educational program. Traditional school and credit offerings give no guidance in this regard. Systems analysis was found to offer a set of basic understandings which provide a useful and meaningful organization of the many diverse elements of a teacher education program. This approach was taken to organize, manage, and evaluate the program.

Other major concepts of the METEP include: differentiated staffing, variable entry and exit points, university commitment to its graduates beyond graduation.

PROGRAM GOALS AND RATIONALE

The University of Massachusetts program is an attempt to institutionalize change through thorough analysis of educational roles, tasks, structure, and objectives. It is based on seven overriding assumptions:

1. The role of the elementary school teacher is changing and will continue to change in the future. We must prepare teachers for change and not stability. The concepts of performance criteria, multiple instructional routes, differentiated staffing patterns, and continual inservice training programs appear to offer a meaningful approach to education in the future.
2. Specific performance criteria, based on an analysis of knowledge, skills, and attitudes in the human relations, behavioral, and content areas should be identified to provide a flexible basis for change. When the trainee meets the specified criteria requirements, he will have completed the preservice aspect of the program, regardless of the length of time enrolled. Thus, variable entry and exit points in the programs will occur.

3. Elementary school staffs will begin to differentiate their roles as teachers, thus requiring personnel with different competencies in new and different areas of specialization. Special consideration of differential staffing seems essential in the schools of the future.
4. Since there is no real evidence of the efficacy of any one major strategy of teacher training, this program includes as many widely differing overall strategies as possible in order to provide for examination of training consequences, for insights into relative training efficiencies, and for discovering relative acceptance and appreciation of the processes by trainees.
5. On the assumption not only that each trainee's strengths and weaknesses will differ, but also that they will change during the program as a desired consequence of training, one major goal is to provide continuous diagnosis of the needs of each trainee and constant evaluation of the program components designed to meet these needs. Cronbach's concept of aptitude-treatment interaction is an important research component of the program.[1]
6. As a consequence of the above goal, one of the most important emphases throughout planning will be the development of multiple program alternatives, so that there are never fewer than two alternative and equal instructional paths to the same objective.
7. In most teacher training programs, the university's commitment ceases upon graduation. The graduate rarely receives diagnostic help, but instead is merely evaluated. It is the belief of the designers of this program, on the other hand, that a teacher's training never ends, and therefore a closely knit relationship between pre- and inservice training will be developed. The resources of the university, both technological, such as video tape, and human, such as supervision, will be made available systematically to the graduate. In addition, these same resources will be made available to other teachers in the area.

SELECTION PROCEDURES

The METEP was not designed with any particular student population in mind. Any student in the university will be eligible to enroll. We will require a number of tests designed to measure certain aptitudes for research purposes, but not for screening and selection procedures. However, the model is designed so any institution can establish whatever requirements it so desires. This aspect of the program is open-ended.

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[1]Lee J. Cronbach, "How Can Instruction Be Adapted to Individual Differences?" Learning and Individual Differences, edited by Robert M. Gagne (Columbus, Ohio: (Charles E. Merrill Books, 1967), pp. 23-39.

PROFESSIONAL PRESERVICE COMPONENT

Philosophical Base

The METEP was not designed to produce teachers who hold a particular philosophy about how children should be taught or what they should learn. We hope that the program will produce individuals representing diverse philosophies. If there is any particular thread running through the program, it is that the flexible teacher, the one who has the necessary skills and knowledge to react to different situations in different ways and who has alternative means to achieve different objectives with different students under different circumstances, will be the most effective. The program is designed to achieve this flexibility.

METEP Parameters

One way of visualizing the METEP is to imagine it as a flowing stream evergrowing as it moves toward its goal. (See figure 1.) The mainstream is the METEP; the offshoots, which also are constantly growing, represent performance criteria in the various areas of competencies which a differential staff in an elementary school might possess. There is nothing fixed about these competency areas. It is expected that more competencies would be added or deleted as needed. Presently, however, these are the areas in which teachers would receive training in our program. Other institutions might define different areas of competencies which they think are more appropriate.

The areas of competencies for which performance criteria have been written are:

Cornerstone criteria

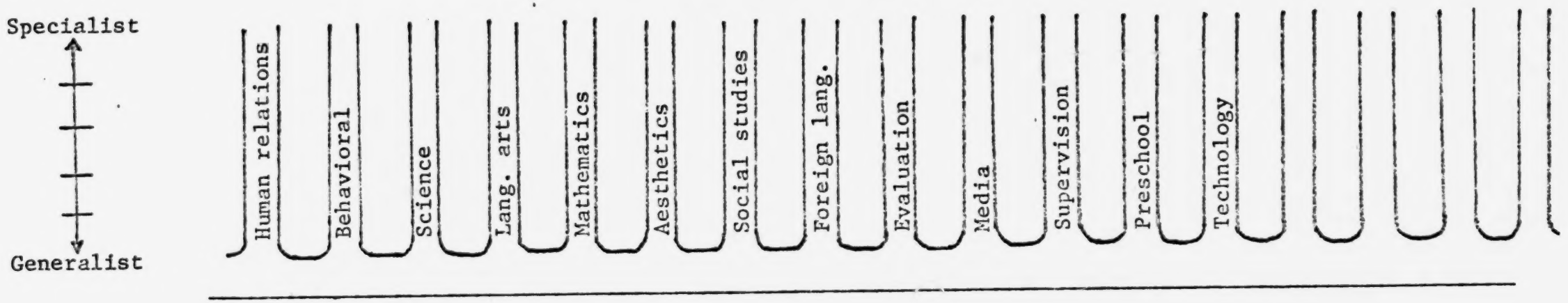
1. Human relations.
2. Behavioral skills.

Content criteria

1. Science.
2. Language arts.
3. Mathematics.
4. Aesthetics.
5. Social studies.
6. Foreign language.
7. Pre-school.

Service criteria

1. Evaluation.
2. Media.
3. Supervision.
4. Technology.



Example student profiles

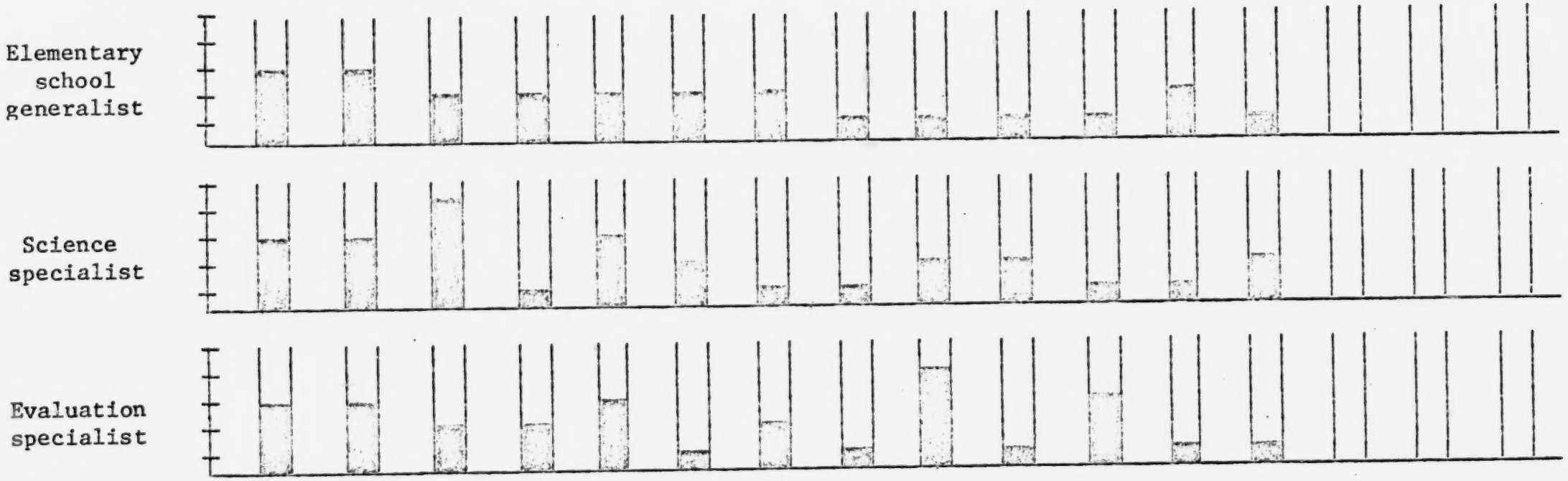


FIGURE 1

MODEL ELEMENTARY TEACHER EDUCATION PROGRAM

Cornerstone Criteria. The first two, human relations and behavioral skills, are considered to be the cornerstone areas for elementary school teachers. It is in these two competency areas that the teacher will better understand himself, others, and his relationships to others, and where he will master teaching skills to help him become an effective teacher.

Content Criteria. Science, language arts, mathematics, aesthetics, social studies, and foreign languages represent content areas which form the curricula in most elementary schools. In addition, a special program on preschool education would be part of our teacher education program drawing upon the content areas. Although these content areas now constitute a traditional elementary school curriculum, the substance of these areas have been modified to reflect the underlying principles of the METEP.

Service Criteria. The evaluation area includes performance criteria for the teacher in tests and measurements as well as skills required to make decisions on whether to implement new curricula.

The media area contains criteria from simple to complex understanding of the area of audiovisual media. The supervision area contains criteria for the effective training of supervisors in the elementary school. Criteria in the area of technology also have been written as required supplements to any of the regular areas of concentration. Since our world is increasingly a technological one, it is deemed desirable that a rudimentary knowledge of technology become a part of every teacher's training.

Specialist-Generalist. The performance criteria in each area are defined, whenever possible, in a hierarchical order from the simple to the more complex. Note in figure 1 that the words generalist and specialist appear along the vertical dimension of the figure. The teacher trainees would have the opportunity to decide if they wanted to specialize in a particular area or to be a generalist elementary school teacher with certain levels of competency in each of the areas. If a trainee elects to specialize in science, for example, he would be required to meet certain minimal criteria in the human relations and behavioral areas, a high level or criteria in the area of science, as well as defined minimal levels in all of the other areas. (See figure 1.) Requiring every teacher, whether he is a generalist or a specialist, to meet a minimal criteria level is a value judgment with which some teacher educators may not agree. The rationale for this requirement is our belief that every elementary school teacher should know at least something about the various competency areas represented by a differentiated staff, if for no other reason than to improve communication and open-mindedness among the teachers. This decision is an arbitrary one, and any institution planning to implement this model would have to decide this issue for itself.

Another arbitrary issue regards what minimal performance criteria are to be required for both generalists and specialists. These decisions must be made using the best judgment of the teacher education institution's faculty. After the program has been in operation, data will be available for determining whether the minimal levels are too high or too low and can be changed as needed.

It should be noted in figure 1 that the areas of competency are not closed figures, but are open at the top. This symbolizes the fact that in any one area a person could spend a lifetime and not be able to meet all the possible criteria which could be written as more information and skills become known and developed. It should also be noted that there are some blank off-shoots from the mainstream. These represent the other areas of competencies which can be developed as the elementary school changes.

Although the future existence of differentiated teaching staffs is one of the basic assumptions of the METEP, there has been no attempt to define specifically a differentiated staff model. Instead, the areas of competencies that might be possessed by a differentiated staff have been specified. Thus, rather than creating a model which would be only one of many possible differentiated staff models, it was decided to focus on the knowledge and skills that would be required of an elementary school staff, not the definition of the particular roles within a differentiated staff. In this way, the METEP is compatible with the principles of staff differentiation rather than being tied to any one model of staff utilization.

A Conceptual Structure for Performance Criteria

The formulation of performance criteria requires the specification of instructional and program goals in terms of behaviors to be exhibited by the trainee when instruction has been completed. Performance criteria, as we have defined them, are essentially behavioral objectives.[2] They

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[2]Example Performance Criterion

PROBING QUESTIONS

Objective: To require students to think beyond their first answer to a question.

Criterion: The teacher will microteach three five-minute sessions in which he probes students by (1) asking pupils for more information and/or more meaning, (2) requiring the pupil to justify rationally his response, (3) refocusing the pupil's or class's attention on a related issue, (4) prompting the pupil or giving him hints, (5) bringing other students into the discussion by getting them to respond to the first student's answer.

Evaluation: Supervisor will observe the lesson and categorize the probing questions in the five categories. Supervisor will judge teacher performance on whether the teacher responds in the five ways and on whether the teacher can concentrate on one student's question and answer.

Instructional Alternatives: (1) Teacher will observe a film of a model teacher asking probing questions. (2) Teacher will practice asking probing questions with just one student. (3) Teacher will practice asking probing questions with a group of 10 students.

state the behavior expected of the teacher, under what conditions the behavior will be performed, and how the behavior will be evaluated. In addition, at least two instructional alternatives are provided for each performance criterion. Careful formulation of performance criteria liberates the planners from describing the program in terms of traditional courses. Rather it is recognized that there are alternative paths and the alternative paths for meeting these criteria has been of central concern to the architects of this program.

Performance criteria have been developed in three broad conceptual areas related to teaching: (1) content knowledge, (2) behavioral skills, and (3) human relations skills. (See figure 2.)

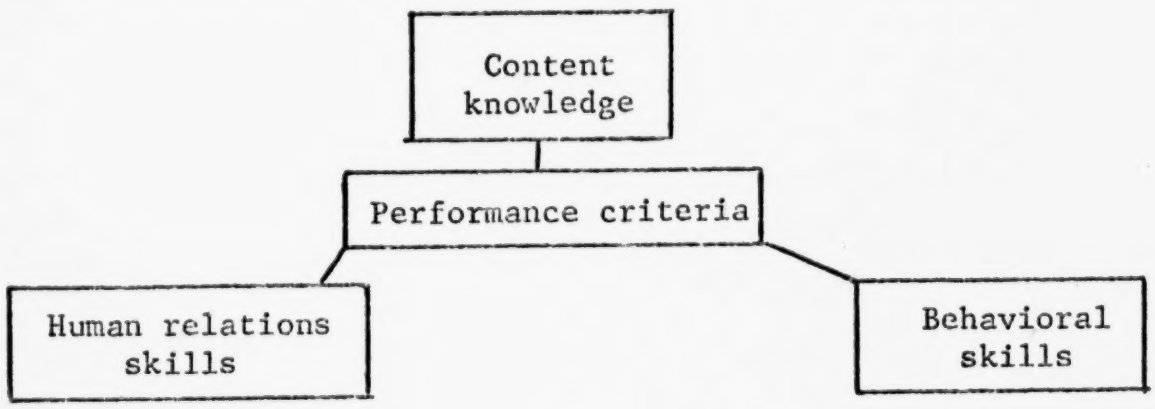

FIGURE 2

PERFORMANCE CRITERIA

Content Knowledge. The restatement of content requirements from course requirement for a specified period of time to performance criteria which emphasize the ability to perform was the major thrust in the planning stages of METEP. It is believed that recognition should be given to the fact that content knowledge is derived from many sources, formal coursework being only one.

Content knowledge is defined to include the depth and breadth of content most often seen as deriving from undergraduate liberal arts courses as well as the kind of content knowledge most often associated with that acquired within a school of education. The latter is seen as a logical extension of the former, inseparable, but focused on questions of relevance and conceptual organization for pupils at the elementary level.

Many of the proposals on performance criteria suggest new and intriguing blends of content areas. For example, the importance of human relations understandings in social studies is one such potential blend which results from a performance criteria approach. Another example is the possible relationships between aesthetics and science or language arts. It is expected that a blending of more than one content area in subject matter fields will occur more and more as the performance criteria approach develops.

Behavioral Skills. One of the basic goals of the teacher education program is the development of technical skills of teaching. The basic premise of the technical skills approach is that much of teaching consists of specific behavioral acts. If skills and behaviors which teachers perform often in

the classroom can be identified, different training protocols or established procedures and techniques can be developed in order to produce proficiency in their use. In other words, much of the complex act of teaching can be broken down into simpler, more easily trainable skills and techniques.

A training technique for developing specific teaching skills is the process known as microteaching. It exposes the trainees to variables in classroom teaching while reducing the complexity of the situation. The teacher attempting to develop a new teaching skill is not confronted with preparing a lesson plan of 45 minutes in length nor does he have to worry the teacher trainee to focus his attention on mastering a specific technique.

One of the main components of the proposed teacher education program will be the implementation of microteaching in order to train prospective teachers in the technical skills which have been identified.

The technical skills approach is not one of just mechanical competence in certain teaching skills. Along with his gaining proficiency in skills, the teacher trainee should be encouraged to become a professional decision-maker. The trainee should decide when to use which skills to meet the aims of instruction and the needs of the pupils. The teacher is the instructional manager of the classroom and, as such, must make decisions as to the appropriate method of achieving the instructional goal, when the particular method should be used, and what activities should precede and follow it. Such decisions face the professional teacher everyday, and an effective training program must help the prospective teacher become an effective decisionmaker. With performance skills clearly mastered, the teacher can be a real decisionmaker. He can focus in an effective way on such problems as the individualization of instruction and the development of students' talents and interests. He has more alternatives available to reach individuals, to motivate students, and to improve the effectiveness of his instruction.

Human Relations Skills. Human relations is not a mysterious activity. Rather it is a codifiable set of behaviors which describe what goes on inside a person or between people.

Human relations is defined as behaviors exhibited in relation to self and other individuals and relation to groups.

Thus, an individual thinking about himself or simply sitting by himself is engaging in human relations behavior. Two individuals meeting in an interpersonal interaction are engaging in human relations behaviors. School classrooms or group dynamics sessions are situations in which an awesome number of human interactions are going on. In short, any human behavior or behaviors engaged in intra- or interpersonal activities represent human relations behaviors.

Human relations has been defined in the past almost always from a value framework. Somehow, human relations is seen as a good thing. Thus, traditional definitions of human relations tend to center on what should be rather than what is. By doing so, human relations experts have tended to confuse the present with future goals. The aim in this proposal is not to avoid the

value issue of what human behavior should be, but simply to report what is actually present so that better specification of future goals may be possible.

The METEP does have many specific value commitments as to the type of human behaviors considered desirable for elementary teachers. Some of these are well known constructs such as warmth, critical thinking, openness, and consciousness of cultural differences. These concepts, however, have been defined within behavioral terms and specified so that it is possible to teach these behaviors directly instead of by admonition, example, or, as is done more commonly, by chance. Some new constructs such as attending behavior, decision process, and the physical system are introduced by adding more precise definition of human relations behaviors. Wherever possible, human relations behaviors have been organized in a hierarchical structure so that the teacher trainee increasingly learns how to integrate old behaviors into new patterns.

The METEP is interested in producing the fully human teacher, a person who meets the human criteria of warmth or human understanding, is capable of rigorous thinking, is in control of his own behavior, and is in a constant pattern of growth. These are high objectives for teacher training, but it is believed that education, psychology, philosophy, and behavioral technology are at a stage whereby the effectively trained teacher can now be a human relations expert in addition to having content knowledge and presentation skills.

A Hierarchy of Teaching Competencies Developed Through Performance Criteria

The three areas developed for performance criteria imply a hierarchy of three areas of competency necessary for superior teaching:

Necessary skills		Competency
Content knowledge	Equal	Subject matter competency
Behavioral skills plus Content knowledge	Equal	Presentation competency
Human relations skills plus Behavioral skills plus Content knowledge	Equal	Professional decisionmaking competencies

The goal of competency in the subject matter, presentation, and professional decisionmaking areas served as the guide for the construction of

METEP. Obviously, these competencies are interdependent and cumulative as are the skills and knowledge necessary to produce them. By first defining the desired performance criteria in the content, behavioral, and human relations areas, modes of instruction were designed to meet these criteria.

Subject Matter Competency. One of the major goals of teaching requires that a body of knowledge be transmitted. In order to achieve this objective, content knowledge must be assimilated into the teacher's cognitive structure. The traditional method by which the teacher trainee acquires this knowledge has been through formal lecture courses outside the school of education. It is proposed here that with effective development of performance criteria a variety of instructional modes may be utilized to meet the criteria. Content knowledge which is central to subject matter competency may be effectively acquired through closed circuit television broadcasts, programed instruction including extensive use of CAI, independent study, seminars, and formal lectures.

Presentation Competency. The possession of adequate content knowledge is a necessary but not sufficient condition for effective teaching. It is the task of the teacher to acquire the appropriate behavioral skills in order to translate the content knowledge into a teachable form. Learning theory has suggested various conditions under which the acquisition of knowledge takes place most effectively. The technical skills approach to teacher training, which was elaborated earlier, translates these principles of learning into principles of teaching. Examples of technical skills which have already been developed and are particularly relevant to the presentation of content include: set induction, closure, asking probing questions, planned repetition, and the use of examples.

Professional Decisionmaking Competency. It is our belief that one of the most crucial aspects of teaching is that of professional decisionmaking. The teacher is the decisionmaker in the classroom. In order to meet his instructional objectives, the teacher must utilize knowledge and skills from all three performance criteria areas--content, behavior, and human relations areas. He must decide what material is to be taught, how it should be taught, and what techniques should be employed. He must also consider the human variables which might affect the outcomes of his objectives. In other words, a myriad of factors must be considered by the teacher whenever he makes major decisions affecting instruction. The greater the teacher's content competency and the more presentation competencies he has, the more alternatives he has at his disposal in meeting his instructional objectives. But having content mastery and presentation mastery is not enough. The teacher must also be sensitive to the personological, psychological, and sociological variables which affect instruction. By constructing performance criteria in the content, behavioral, and human relations areas, and by formulating instructional systems by which these criteria can be met, the teacher trainee will have the prerequisite skills and knowledge necessary to make classroom decisions. A special aspect of the human relations area with implications for decisionmaking is the use of performance criteria relating to listening to others, defining the situation, and "decision process," a new approach to decisionmaking.

Besides possession of the skills and knowledge, practice in facing the situations which require these decisions is necessary. The kinds of activities which allow for this practice include: classroom simulation experiences which require teachers to face, to study, and to solve problems similar to those they will have in the classroom; microteaching and observational experiences---both live and video taped; small group work; and student teaching.

Instructional Procedures

As was stated earlier, at least two instructional alternatives are provided for each performance criterion that the trainee is required to meet. These instructional alternatives include a variety of procedures and experiences. Among these are computer-assisted instruction, simulation, teaching machines, programed instruction, video tape lectures, seminars, microteaching, classroom observations, independent study, apprenticeship teaching, roleplaying games, and sensitivity training. Through this wide variety of instructional procedures, we believe we can help individualize instruction.

Student Teaching

The area of student teaching was not dealt with in detail in METEP. There was no attempt to describe where in the program this took place. Since the program is based upon performance criteria rather than time criteria, different students will engage in practice teaching at different times.

Student teaching has long been considered the one essential ingredient in a teacher education program. Rarely has the function of student teaching been analyzed in terms of expected behavioral outcomes. What do we want the student teachers to be able to do as a result of student teaching? If we approach the area of student teaching from this standpoint, we may well find that many of the skills resulting from student teaching can actually be acquired prior to the student teaching experience through microteaching, strength training, simulation, roleplaying, and other techniques. By specifying behaviorally what we want the teacher to be able to do as a result of student teaching, we may be able to provide much more meaningful experiences both prior to and during student teaching.

We did not reach the point in our model of specifying the behavioral outcomes of the student teaching experience due to the lack of time. However, this is the direction in which we are heading.

RELATIONSHIP OF PROFESSIONAL COMPONENT TO THE ACADEMIC COMPONENT

There has been no attempt made in METEP to specify the yearly sequence of experiences of prospective teachers in the program. We do not assume, for example, that the first two or three years of an undergraduate's education will be spent in the college of arts and science , after which he will

enroll in the school of education. Instead, we propose to specify, with the assistance of faculty in the subject matter areas, the content knowledge necessary for elementary school teachers to function well in the classroom. This content knowledge will not be stated in terms of courses, but rather as performance criteria. Examples of these content criteria are given in appendices 1 and 2 of the Final Report.

Thus, a student may take certain courses in arts and science which will help him meet the specified content criteria, but the courses themselves are the instructional alternatives rather than the criteria. They are the means by which the student may achieve the criteria. If after taking a particular course in biology, for example, he cannot achieve certain criteria that the course was supposed to help him achieve, he would have other instructional alternatives available to him. The METEP is designed so other universities can accommodate their unique circumstances within the model. When particular activities would be introduced in the undergraduate program, what percentage of the total undergraduate curriculum would they comprise, and what courses outside education would be required or recommended? The METEP was designed purposely to allow other institutions to adapt the model to their own particular situations.

INSERVICE COMPONENT

Existing inservice education programs seem to be based on the belief that the completion of preservice training and bestowal of a teaching credential creates a lifetime of professional competence and that any inadequacies in a teacher's preservice training will leave a lifetime of irremediable professional handicaps. It is apparent that our present compartmentalization of pre- and inservice education must be replaced by a perspective which views the intellectual and practical development of educators as occurring along a continuum beginning with the decision to enter the teaching profession and ending only upon permanent retirement.

The METEP has developed a set of guidelines for such a preservice-inservice continuum. These guidelines are based on the use of hierarchies of performance criteria for two distinct, but interrelated purposes: (1) diagnosing individual teacher education needs and prescribing from a number of learning alternatives designed to remediate those needs, and (2) evaluating teaching competency and growth as a teacher in order to determine initial placement and career advancement within a differentiated staffing structure.

Operating within the perspective of a differentiated teaching staff structure fosters the recognition of significant distinctions among teacher roles. It is at that point that we are able to begin developing the performance-based task delineations which will provide the key to a relevant inservice education program. As differentiated staffing becomes a possibility, then carefully thought-out performance criteria for teachers become a necessity. A school which allows for the possible diversity of teacher roles is uniquely motivated and able to analyze and reformulate the criteria

by which it can judge competence in any given teaching task. With such criteria, teacher training, both at the pre- and inservice levels, becomes closely integrated with the main concern of all educators--the educational development of students.

If teacher education is reorganized so that continuous, relevant growth experiences are provided for teachers throughout their careers, then pre- and inservice education will become a part of the same continuum. It simply will not do any longer to separate preservice from inservice experiences. We must, in the process of specified teaching performance criteria, set out our priorities in such a way that the credentialing procedure becomes a formality and professional growth becomes the criterion of all training experiences. Whatever criteria we settle on for preservice programs and whatever training procedures we judge relevant at that level must be applied and extended in our inservice programs. Insofar as we insist on the distinction between pre- and inservice training techniques, we simply reveal our ignorance of systematic criteria by which we can assess the professionalism of our teachers. But as soon as we give serious attention to the development of such criteria, the distinction becomes meaningless. The point here is not that pre- and inservice training are, or should be, identical. Rather, it is that the procedures and goals of each must become specific and defensible in a way that they currently are not. We must make some tentative decisions regarding what criteria a teacher should meet before reaching a credential and what criteria should be met later as part of his inservice professional growth. With such modifiable decisions at hand, we can begin to design inservice programs which have the continuity and rationality so clearly lacking in most current approaches.

FACULTY REQUIREMENTS AND STAFF UTILIZATION

In phase I all of the performance criteria had not been written since doing so was actually part of the phase II feasibility project. Therefore, it was impossible to make accurate estimates of the faculty and staff requirements. (A more complete curriculum composed of performance criteria and instructional alternatives has since been developed as part of the phase II project conducted at the University of Massachusetts.)

EVALUATION COMPONENT

The evaluation of the METEP program has been designed within a conceptual model developed for the program and called the evaluation skills training program section. Since the purpose of the evaluation, the nature of its results, and the size of the program component being evaluated determine the type of evaluation required, and since several evaluation activities are required to provide the information needed for quality control of a specific program, the proposed evaluation has a multidimensional design. Evaluation activities for the METEP emit from two distinct program components, the control subsystem and the analysis subsystem.

The control subsystem will house the evaluation activities which will offer feedback information on the efficiency of the system. Since the purpose of these activities is for internal control of effectiveness, the size of the evaluation units is generally limited to individual program subsystems. The nature of the required results calls for specific data on the METEP program suitable to problemsolving decisions demanded by the individual circumstances created in program operation. These evaluation activities provide managerial data on facilities and staff as well as feedback on specific components production.

The analysis subsystem will house the evaluation activities designed to offer external information on the appropriateness and competitiveness of the overall program. These activities have been designed to develop information on the relationship of the model and its products to the world of education. By design, these activities seek generalizable results, and the unit of evaluation is the total program. Market value, validity of performance criteria, and the degree to which the program maintains social relevance and meets the current needs of education are the concern of these activities.

More details can be found in main Final Report.[3]

PROGRAM MANAGEMENT

How can teacher education best be conceptualized? We have developed many models over the years, but inevitably have returned in practice to traditional forms of teacher education. As performance criteria were developed by the project staff, it became increasingly apparent that a totally new approach to the organization of teacher training was necessary.

Systems analysis has proven to be the most useful method of organizing performance criteria. To develop a teacher (or to use the words of systems analysis, "product") of maximum effectiveness to himself and society, we must consider the many inputs and outputs of the person, of the teacher education program, and of the schools in which the teacher is eventually placed. Further, we must consider the way in which these three major components interrelate. Systems analysis provides the most comprehensive method of organizing objectives presently available.

The subsystems which compose the METEP are indicated below.

Control Subsystem

This subsystem performs several functions in maintaining the day-to-day operation of the METEP system. It is the process controller and is

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[3] Dwight Allen and James Cooper, Model Elementary Teacher Education Program, Final Report (Washington, D.C.: Government Printing Office, 1969.), pp. 48-52.

responsible for insuring that the system remains in a stable state and operates in an optimum manner. It carries on a continual analysis of collected data and uses this analysis for decisionmaking. The subsystem provides immediate feedback for system control. It is concerned with the following functions:

1. Aptitude assessment.
2. Guidance.
3. Scheduling.
4. Attitude monitoring.

Administrative Subsystem

The functions performed by this subsystem include supplying materials, staff, and paraprofessionls necessary to operate the program; managing and allocating funds for operating the program; and coordinating the program with the rest of the university and with other agencies outside the university, e.g., certification agency, school districts.

Information Subsystem

The METEP will require a large amount of data collection and manipulation for system control and monitoring. Highly structured and organized methods of data storage must be used in program implementation. Information must be readily available for decisionmaking. For example, trainees must be able to reschedule an instructional alternative within a short time. This implies the status of the resources necessary, for the newly selected alternative must be determined with ease. Files must be maintained indicating the current status of all resources including staff, facilities, and equipment.

Data contained in this subsystem will involve: (1) aptitude and achievement data stored in the control subsystem, (2) sequence of learning experiences selected by each trainee to meet each performance criterion and some measure of the effectiveness of this sequence in relation to trainee's goals, (3) the cost in terms of resources, and the student and faculty time required to help each student meet each performance criterion through each instructional route, (4) system status of each trainee, i.e., what performance criteria he has met and what educational alternatives he is now engaged in for meeting which performance criteria, and (5) utilization and availability of all training resources including staff, equipment, and facilities.

Placement Subsystem

This is not completely within the bounds of the system, but it does play a very important function. Unless the product produced has a market, the system will become inoperable. Therefore, one of the important tasks of the placement subsystem will be to disseminate information about the teacher-training program and the products of that program to prospective employers. In addition, this subsystem will determine qualifications and

vocational interests of trainees, determine employment opportunities, and recommend trainees to positions.

Educator Subsystem

The educator subsystem can be segmented into two not completely distinguishable components--human and automated. Both components are responsible for a direct educational interaction with trainees. This subsystem is responsible for generation of all instructional methods used by the teacher trainees. These methods range from formal lectures to microteaching clinics. The subsystem must respond to demand changes by trainees in instructional alternatives. For example, if a trainee for good reason indicates a desire to terminate a seminar and initiate a simulation exercise, staff and equipment must be rescheduled quickly to meet this new demand. This rescheduling will be done within the constraints of the availability of resources.

Analysis Subsystem

Feedback regarding the quality, success, competency, acceptability and competitiveness of system output is provided by this subsystem. This feedback is used to add, delete, and modify performance criteria. The analysis of trainee performance and indirectly the effectiveness of performance criteria is measured using rating procedures, video tapes, archival data, and market value of trainees. Comparative analyses are made of three groups--program graduates, graduates of other teacher education programs, and the population of experienced teachers.

More information on program management components can be found in the Final Report.[4]

SUMMARY

For the reader interested in consulting the METEP Final Report, the following set of readings is suggested to obtain a capsule summary of the program:

1. Assumptions and parameters of the METEP provide an overall picture of the total proposal.[5]
2. The systems conceptualization describes how the program would function as an organizational unit.[6]
3. The material on human relations, behavioral skills, and one subject matter area of interest provides a background of information on the method of approach in applied areas.[7]
4. Concurrently with 3, the reader may wish to examine related performance criteria from the appendices with pages 89-148.

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[4] Ibid., pp. 29-48.

[5] Ibid., pp. 11-18.

[6] Ibid., pp. 27-54.

[7] Ibid., pp. 89-148.

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